EXECUTIVE SUMMARY

The objective of the Regional Irrigation Distribution System (RIDS) Feasibility Study for the Lower West Coast Region is to develop the preliminary design information for the preferred alternative to supply enough water to meet all or a portion of the projected (year 2020) urban irrigation demand associated with Sub-region 1. Although the area has been progressive in developing alternative supply sources including reclaimed water, these sources will not be adequate to meet future demands. Also, because utilities in this sub-region have their own discrete infrastructure, there has been no optimization of the resource on a regional basis.

The RIDS project was one of the recommendations identified in the District's *Lower West Coast Water Supply Plan* (Water Supply Plan) completed in April 2000. The Water Supply Plan recommended the RIDS to evaluate the "feasibility of constructing regional irrigation water distribution system(s) and other options to meet the growing urban irrigation demands of this area".

The RIDS Master plan was completed in 2002. The Master Plan study area comprised the coastal area (western portion) of the Lower West Coast Region. It included the service areas of the Cities of Cape Coral, Fort Myers, and Naples, and the franchise areas for Lee County Utilities, Collier County Utilities, Florida Water Services, Gulf Environmental Services, and Bonita Springs Utilities.

The completion of the RIDS Master Plan resulted in the recommendation to develop a feasibility study for each sub-region to enhance the existing information, refine the recommended projects, provide more detailed cost estimates and develop basis of design information.

This feasibility study covers the Bonita Springs Utilities/Collier County/City of Naples service area.

To determine the amount of water from alternative sources that will be necessary for future urban irrigation water, an evaluation of water demands was performed. The demand analysis was determined on a temporal basis. The current average demand for this sub-region is approximately 86 MGD. Urban irrigation demand for the Year 2020 was projected at 132 MGD. Currently, the stakeholder utilities provide 17.5 MGD of reclaimed water for urban irrigation to this sub-region.

Alternative sources of supply were determined to address the urban irrigation demands. Additional allocations from resources that are currently stretched, such as groundwater, will be minimized. Therefore, an inventory of potential sources of supply was conducted and prioritized to address future irrigation water needs in the study area. These potential sources of supply are:

- Reclaimed wastewater from municipal wastewater treatment plants
- Water recovered during the dry season from reclaimed water aquifer storage and recovery (ASR) systems recharged during the wet season
- Surface water from streams, rivers, abandoned borrow pits, and canal systems having salinity control structures
- Water recovered during the dry season from surface water ASR systems recharged during the wet season
- Groundwater withdrawal adjacent to surface water sources such as mining pits

These sources provided a total future flow of 111.5 MGD to offset potable water demands and future groundwater withdrawals.

In order to develop a preliminary cost estimate associated with the projects, various potential projects were analyzed on a sub-regional basis. The costs consider the cost of financing the initial project capital costs, including assumptions about potential grant funding, and annual operations and maintenance expenses. These costs are then divided by the expected production of irrigation water resources for the identified projects to determine the unit cost of the irrigation water resources for each sub-region. In order to calculate the cost per gallon, it was assumed that the total annual production of each project would be approximately equal to 180 days of production based on the project capacity measured on an average daily basis. The unit costs for the development of the irrigation water resources as identified herein range from $1.06 to $4.28 per one thousand gallons depending on the project.

It was determined that the preferred alternative is eligible for several different funding options including:

- EPA Grants - $2M/Year
- District Grants - $1M/Year
- Governor's Program Grants - $500K/Year
- SRF Loan - Balance of Capital

It was determined through consensus that individual interlocal agreements on a project-by-project basis, rather than focusing on the RIDS projects as a whole (i.e., Authority or regional utility), would be utilized as an institutional framework.

Implementation of the RIDS will require additional phases to design, finance and construct the improvements. Assuming Phase 1 included the Master Plan and Phase 2 includes the Feasibility Study, subsequent phases include the following:

- **Phase 3 Engineering Design –** Includes design, permitting and bidding of projects.
- **Phase 4 Construction –** Construction and startup of projects.